



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/849,357	05/19/2004	Zhen Liu	YOR920040098US1	6252

26291 7590 01/11/2007
PATTERSON & SHERIDAN L.L.P.
595 SHREWSBURY AVE, STE 100
FIRST FLOOR
SHREWSBURY, NJ 07702

EXAMINER

RAHMAN, FAHMIDA

ART UNIT	PAPER NUMBER
----------	--------------

2116

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/11/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/849,357	LIU ET AL.	
	Examiner	Art Unit	
	Fahmida Rahman	2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 5/19/2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 and 38-40 is/are rejected.
- 7) ☒ Claim(s) 33-37 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 May 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☒ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/12/2004</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-40 are pending.

Oath/Declaration

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02. The oath or declaration is defective because: it does not have the signature of Bowei Xi.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on 10/12/2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is considered by the examiner.

Drawings

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: Fig 1 does not have the numeral 100 mentioned in [0003] of page 1 of applicant's specification. Fig 6 does not have the numeral 600 mentioned in [0029] of page 7 of applicant's specification.

Art Unit: 2116

In addition, Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 1-18 are rejected under 35 U.S.C. 101 because the claimed invention lacks patentable utility and directed to non-statutory subject matter.

Claims 1-18 recites a method for configuring a computing system. However, the method does not have any steps that disclose a presently available benefit. Claim 1 formulates and solves a black box optimization problem that does not have any substantial utility

Art Unit: 2116

unless the information found from solving the optimization problem is used to configure the system. Thus, the claimed invention requires further steps to confirm a real world context of use.

See the MPEP text below:

“Simply put, to satisfy the substantial utility requirement, an asserted use must show that the claimed invention has a significant and presently available benefit to the public. Fisher, 421 F.3d at 1371, 76 USPQ2d at 1230. .. Thus a “substantial utility” defines a “real world” use. Utilities that require or constitute carrying out further research to identify or reasonably confirm a “real world” context of use are not substantial utilities (MPEP 2107.01).”

In addition, claims 1-18 are directed to non-statutory subject matter. It is not appeared whether claims 1-18 provide any tangible embodiment in the recited method as formulation and solution of an optimization problem can be performed with software.

For the rest of the action, it is assumed that the method of claim 1 further comprising the step of applying said optimal setting to configure a computing device.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-5, 10-11, 13, 19-24, 29-30, 32, 38-40 are rejected under 35 U.S.C. 102(e) as being anticipated by Doris (US Patent Application Publication 20050203879).

For claim 1, Doris teaches the following limitations:

A method for configuring a computing system (abstract) having a plurality of tunable parameters (plurality of processing units and data stores mentioned in [0009] and [0010]. These are tunable since tasks and data structures are assigned to these resources in an optimal manner as mentioned in [0003]) and , the method comprising the steps of: formulating an optimal setting for the configuration of at least two of the plurality of tunable parameters as a black box optimization problem ([0014]); and solving the black box optimization problem (Fig 1 shows the steps of solving the optimization problem) using a smart hill climbing method ([0025] mentions that 10 may be considered as hill-climbing search routine. It is smart since it involves steps to avoid

Art Unit: 2116

being trapped inside a local minima), where the optimal setting yields improved computing system performance ([0001]).

For claims 2-5, Fig 2 shows the global search and finding of a point 210. [0033] mentions that a large number of samples are generated around the global solution 210. Thus, a local search around neighborhood is performed in order to find a better solution than 210. The local search method applies gradient based sampling as it climbs the hill gradually to find a better solution.

For claim 10, 210 is an initial candidate point where a local search neighborhood is established. A plurality of samples are generated nearby 210 and processed to determine whether or not more optimal configuration exists nearby. A second candidate point is chosen based on this search.

For claim 11, 210, the initial candidate point, is the center of local search space as 10 samples a large number of configurations within a small search area around 210. The search area is predefined as probability P2 determines the size of the search space ([0026]).

For claim 13, 10 does not stuck at 210. Instead it chooses another candidate point C when better than current optimal solution is found. By setting appropriate value of probability P2, a large number of samples are generated around new candidate point to

ensure that the new point is in fact the most optimal ([0035] and [0026]). Routine 10 updates A and C based on the calculated objective values of samples.

For claim 19, Doris does not explicitly mention about configuring the application server with the setting. However, Doris teaches parallel computer architecture and network processor ([0008]). As network processor is connected to a network, one computer serves as a server. Thus, the application server is configured according to the optimal configuration setting.

7. Claims 20-24, 29-30, 32 and 38 recite the computer readable medium containing an executable program that implements the method of claims 1-5, 10-11, 13 and 19. [0040] of Doris teaches the computer readable medium to implement the method of claims 1-5, 10-11, 13 and 19. Thus, Doris teaches the medium recited in claims 20-24, 29-30, 32 and 38.

8. Claims 39 and 40 recite the apparatus corresponding to the method of claims 1 and 19. As system and means are required to implement the method, Doris teaches the limitations of claim 39 and 40.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2116

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 6-9, 12, 25-28, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doris (US Patent Application Publication 20050203879), in view of McKay, Beckman and Conover.

For claims 6-8, 12, 25-27, 31, Doris does not teach LHS method. McKay et al teach the LHS method to generate samples, although McKay et al do not teach weighted LHS method. Examiner takes an official notice that weighted LHS method for searching is well known in the art. One ordinary skill would be motivated to incorporate weighted LHS method to generate plurality of random samples as LHS provides improved sampling.

For claims 9 and 28, McKay et al teach generation of permutation of random configurations (page 240) corresponding to number of dimensions (16 samples are generated corresponds to number of dimension 4), division of the parameter range of each dimension into a plurality of non-overlapping intervals with equal probabilities (2 intervals with equal probabilities for each dimension), wherein the number of intervals corresponds to the number of random configurations (total number of intervals are $2^{**4} = 16$); and generation of a random sample within each interval of each dimension (each cell has one random sample).

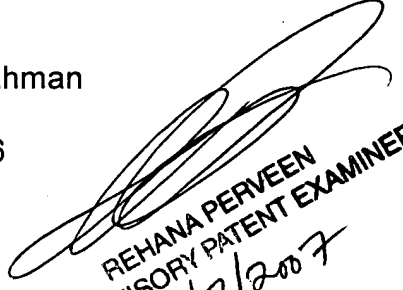
Allowable Subject Matter

Claims 33-37 would be allowable if rewritten to include all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fahmida Rahman whose telephone number is 571-272-8159. The examiner can normally be reached on Monday through Friday 8:30 -6:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rehana Perveen can be reached on 571-272-3676. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Fahmida Rahman
Examiner
Art Unit 2116


REHANA PERVEEN
SUPERVISORY PATENT EXAMINER
1/8/2007